

REMARKS

In the Office Action dated September 3, 2003, the Examiner objected to the specification because of an improper reference to a U.S. patent and for its failure to refer to Figures 3A-F and 4A-D. The Examiner rejected claim 45 as being indefinite. The Examiner also rejected all pending claims as being obvious over the Jankowski et al. patent application in view of the U.S. Patent to Maynard et al. In response, Applicant has amended the specification as well as the claims. For the reasons discussed below, Applicant now believes the application to be in condition for allowance.

Independent claim 37 has been amended to more clearly state that the anode conductor is patterned to be porous as shown in Figure 2M. This anode conductor in conjunction with the thick gas-diffusion electrode affixed to the conductor allows for low lateral resistance while still allowing rapid diffusion through the gas diffusion electrode. Both Jankowski et al. and Maynard et al. disclose use of thin film conductors laying over a substrate. Those skilled in the art will appreciate that this results in excessive polarization of a fuel cell causing a loss of power.

The present invention also includes a conductive substrate. Current is allowed to flow through the substrate itself in the present invention further reducing resistance. Those skilled in the art will appreciate that this design is much more efficient than the thin film conductors used by Jankowski et al. and Maynard et al.

The present invention also takes advantage of a porous thin-film anode conductor acting in conjunction with a thick gas-diffusion electrode. The anode conductor is porous and is coated with a catalytic layer. Those skilled in the art will appreciate that this design greatly increases the surface area of the anode conductor and the catalytic region and further reduces the electrical resistance. This further enhances the efficiency of the invention.

Further distinguishing the present invention from the cited prior art is the fact that the present invention discloses a method of combining an active, integrated circuit with a fuel cell. While Jankowski et al. makes passing reference to integrating a circuit with a fuel cell, it only discloses the incorporation of a passive resistor with a fuel cell. Those skilled in the art will appreciate that


incorporation of such a passive device is a relatively simple matter. It simply requires the addition of a thin layer of a poorly conductive material. In addition, the Jankowski et al. device contemplates being operated at high temperatures. This makes it impractical to incorporate an integrated or other active circuit directly into the substrate of the Jankowski et al. device. The present invention discloses the incorporation of an active circuit directly to the substrate of the invention. Those skilled in the art will appreciate that this allows the present invention to be readily incorporated into the manufacture of electronic devices. Applicant believes that the language of the Jankowski et al. application is intended to mean that an electronic circuit, specifically a passive resistor, is inserted or incorporated into the device and does not refer to a true integrated circuit or other active device. Applicant has amended claim 37 to clarify this distinction.

Applicant has also amended claims 46 - 48 to correct the typographical errors.

Enclosed is a Petition For A One-Month Extension of Time and a check in the amount of \$55.00 to cover the petition filing fee.

For all the above reasons, Applicant now believes that the application should be in condition for allowance and such action is earnestly solicited. If, for some reason, any other issues remain, a telephone conference with the Examiner is respectfully requested.

Respectfully submitted,


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